



DEQING HUAYING ELECTRONICS CO.,LTD.

# APPROVAL SHEET

**SAW BANDPASS FILTER**  
**PART NO.: NDFH024-2442SA**

<b>Product Type:</b>		<b>Customer:</b>	
SAW Filter			
<b>Part NO.:</b>		<b>Customer Part NO.:</b>	
NDFH024-2442SA			
<b>Ver. Ctrl.:</b>		<b>Issued Date:</b>	
SFH024-2442SA-161018-v1.0			

<b>PREPARED BY</b>	<b>CHECKED BY</b>	<b>APPROVED BY</b>

Part No.	:	NDFH024-2442SA
Pages	:	8
Data	:	2016-10-18
Revision	:	SFH024-2442SA-161018-v1.0

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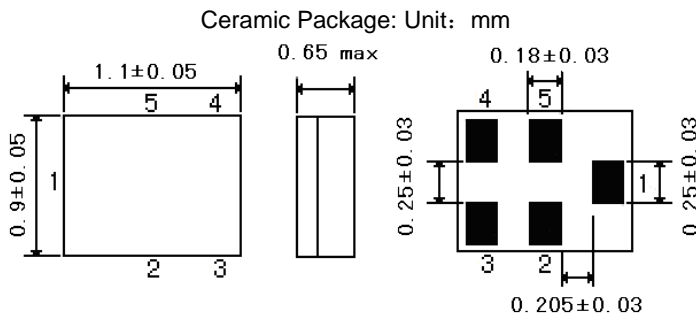


**Features**

SAW filter for WIFI.

- 1 High stability and reliability with good performance.
- 2 Narrow and sharp pass band characteristics. RoHS compatible.
- 3 Low insertion loss and deep stop band attenuation for interference.
- 4 Low – loss SAW filter for WIFI transmission.
- 5 Package size 1.1mm\*0.9mm

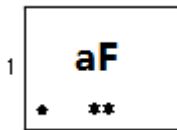
**Package Dimensions**



**Pin Configuration**

1	Input
4	Output
2,3,5	Ground

**Marking**



Top View, Laser Marking

“aF”: Part number

“.” Dot marking, indicates input 1

” 1” Terminal1

The first “\*”: Month Code (The code shown below varies in a 4-year-cycle)

Code	1	2	3	4	5	6	7	8	9	10	11	12
2016/2020	n	p	q	r	s	t	u	v	w	x	y	z
2017/2021	A	B	C	D	E	F	G	H	J	K	L	M
2018/2022	N	P	Q	R	S	T	U	V	W	X	Y	Z
2019/2023	a	b	c	d	e	f	g	h	i	j	k	m

The second “\*”: Date Code

<b>data</b>	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
code	A	B	C	D	E	F	G	H	J	K	
<b>data</b>	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	
code	L	M	N	P	Q	R	S	T	U	V	
<b>data</b>	21st	22nd	23rd	24th	25th	26th	27th	28th	29th	30th	31st
code	W	X	Y	Z	a	b	d	e	f	g	h

## Maximum Ratings

Rating		Value	Unit
DC Voltage (between any Terminals)	$V_{DC}$	10	V
RF Power (in BW)	$P$	29	dBm
Operating Temperature Range	$T_A$	-30 ~ +85	°C
Storage Temperature Range	$T_{stg}$	-40 ~ +85	°C
ESD Voltage (HB)	$V_{ESD}$	>150	V
Moisture Sensitivity Levels	$MSL$	2A	

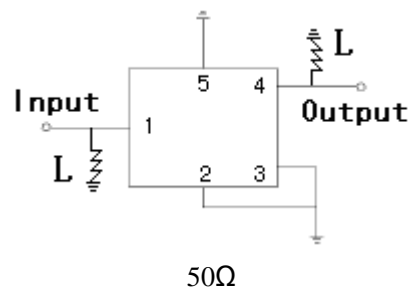
## Electrical Characteristics:

Item		Minimum	Typical	Maximum	Unit	
Insertion Loss	$IL$					
		2403 ... 2471 MHz		1.2	2.2	dB
		2458 ... 2476 MHz		1.2	1.8	dB
		2463 ... 2481 MHz		1.6	2.5	dB
Passband Ripple	$Pr$					
		2403 ... 2481 MHz		0.8	2.0	dB
VSWR	$V_{swr}$					
		2401 ... 2483 MHz		1.2	2.0	
Absolute Attenuation	$\alpha$					
		800 ... 2000.00 MHz	25	27		dB
		2000.00 ... 2300.00 MHz	25	27		dB
		2300.00 ... 2370.00 MHz	27	30		dB
		2370.00 ... 2380.00 MHz	18	30		dB
		2500.00 ... 2502.00 MHz	7	42		dB
		2502.00 ... 2570.00 MHz	12	41		dB
		2570.00 ... 2620.00 MHz	29	34		dB
		2620.00 ... 2690.00MHz	26	31		dB
		2690.00 ... 4800.00 MHz	25	29		dB
		4800.00 ... 5825.00 MHz	27	35		dB
		7200.00 ... 7500.00 MHz	30	42		dB
Input / Output Impedance (Nominal)		50Ω//4.3nH				

 RoHS Compliant

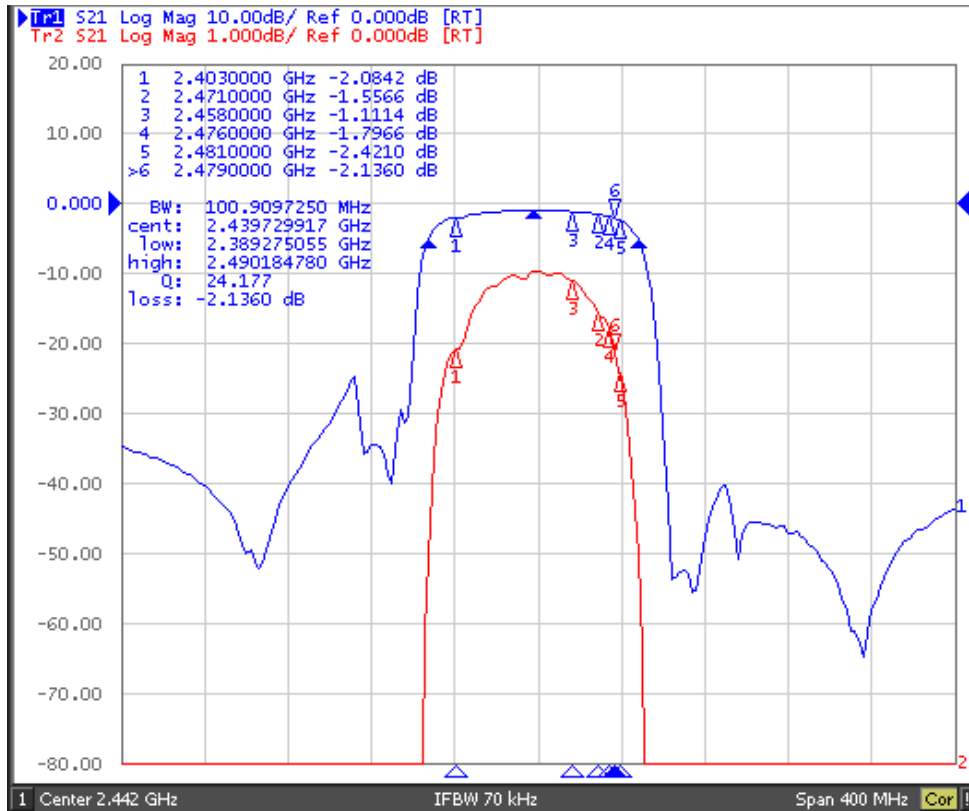
 Electrostatic Sensitive Device

## Test Circuit

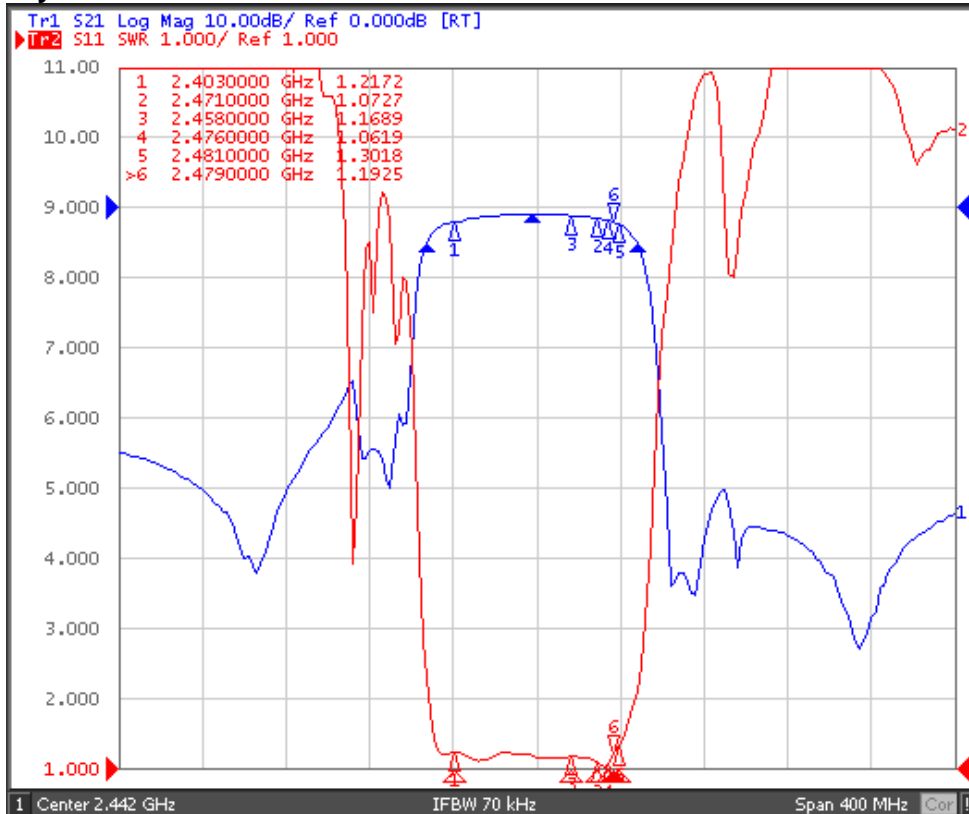

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Typical Frequency Response

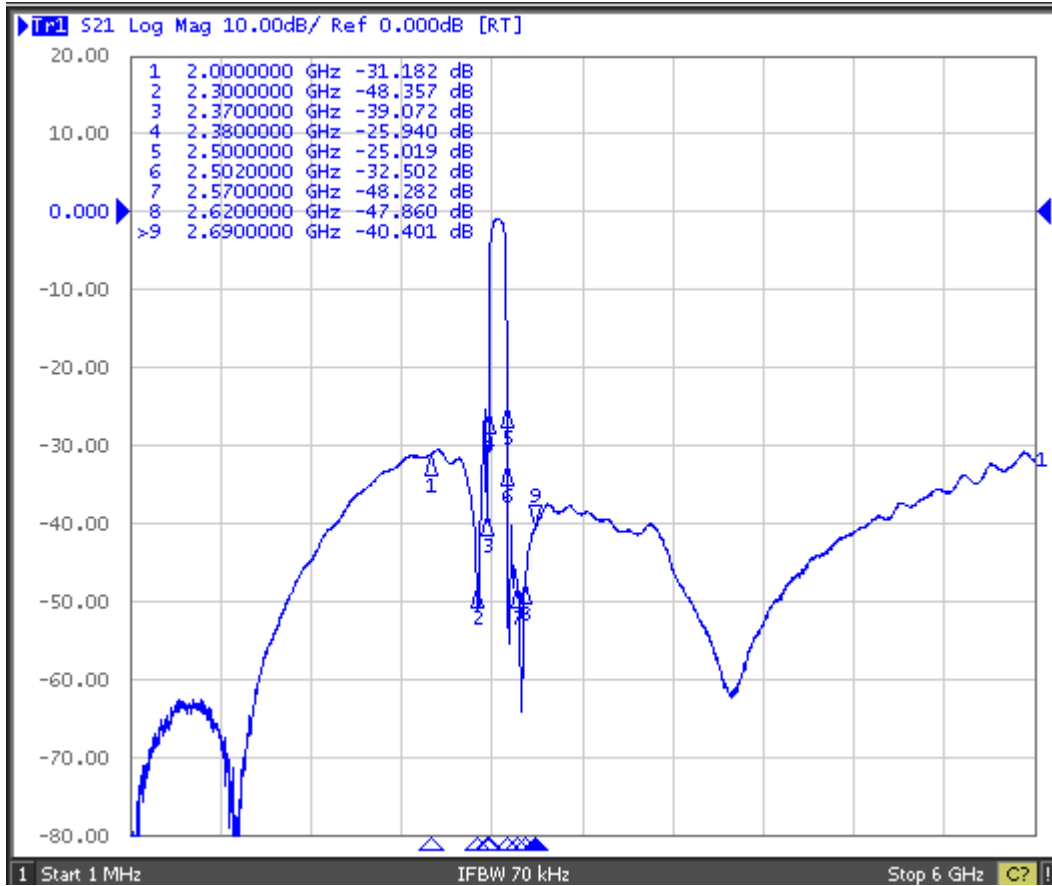
S21



S11 Group Delay



Far side



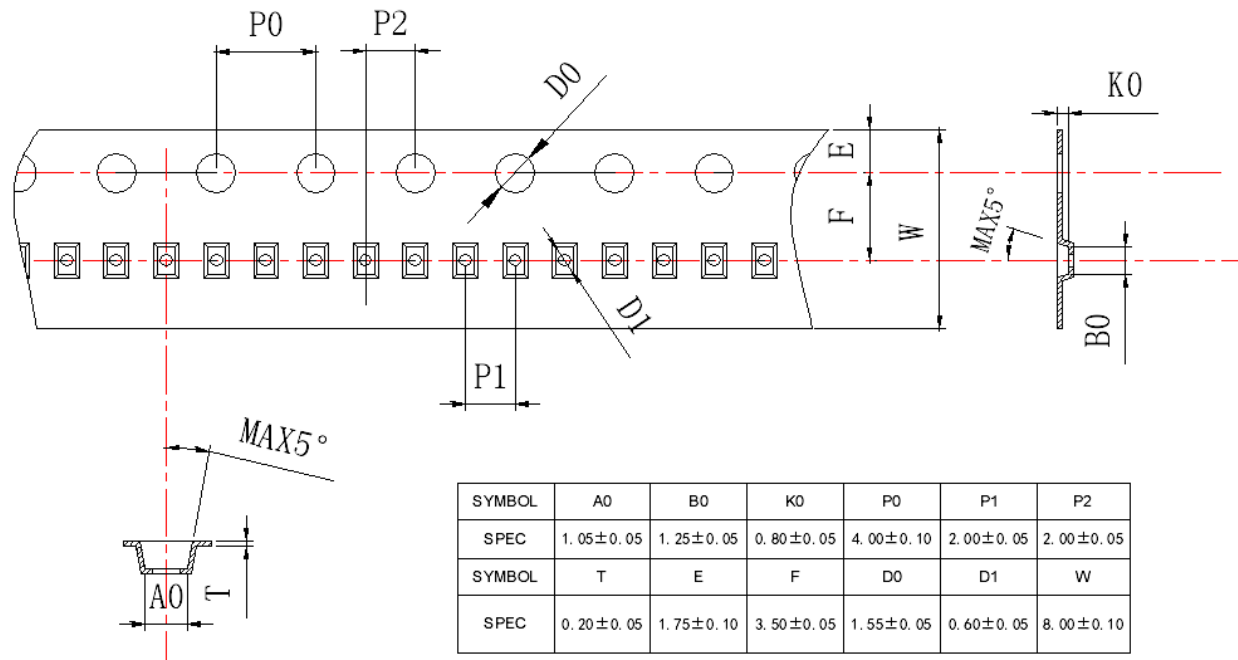
## Stability Characteristics

Item No.	Test Item	STD Reference	Test Conditions	per lot
	Preconditioning	JESD22-A113	1) Temperature Cycling, 5 cycles -40°C to 85°C 2) Bake, 24 hrs @125±5°C; 3) Reflow, 3 reflow cycles 4) Drying, Room ambient temperature	177
1	Temperature Cycling	JESD22-A104	-40 °C / +85 °C ,40min dwell,<1 min transfer time,500cycles	23
2	High Temperature Storage	JESD22-A103	85°C,240hr	23
3	Low Temperature Storage	JESD22-A119	-40°C, 240hr	23
4	Temperature Humidity bias	JESD22-A106B	85°C 85%RH 240hr	23
5	Unbiased Temperature/Humidity	JESD22-A102C	+121°C 100%RH 96hr	23
6	Human Body Mode ESD	JESD22-A114F	Ta=25°C, ≥150V	5
7	Drop Test	IEC 68-2-32	100cm , 3times Steel floor JIG(110g~150g)	6
8	Solderability	JESD22-B102	Characterization per JESD22-B102	5
9	Vibration, Variable Frequency	JESD22-B103	20 Hz to 2 kHz (log variation) in > 4 minutes, 4X in each orientation, 20g peak acceleration	23
10	Mechanical Shock	JESD22-B104	Y1 plane only, 5 pulses, 0.5 ms duration, 1500 g peak acceleration	23

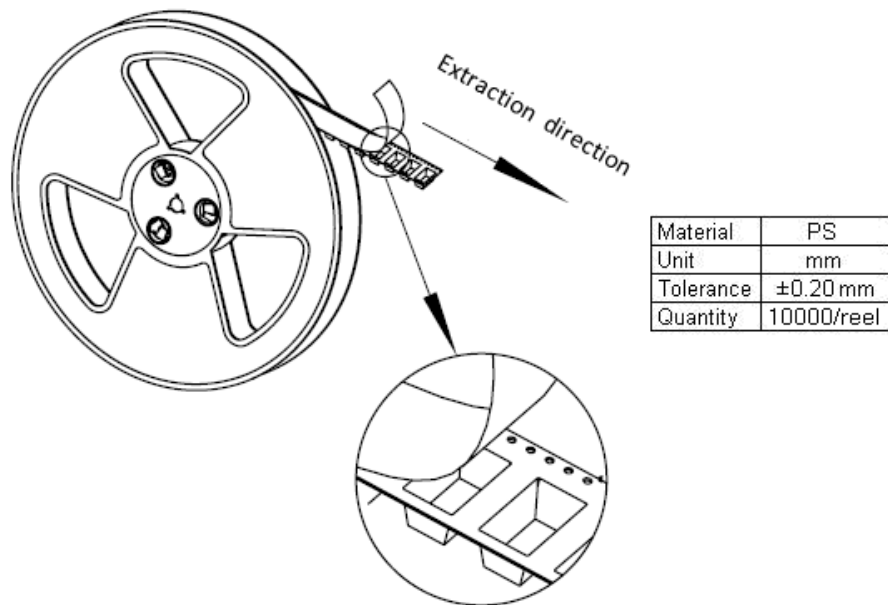
**Requirements:** The SAW filer shall remain within the electrical specifications after tests.

**Packing Information**

Carrier Tape



Reel Dimensions



Outer Packing

Type	Quantity	Dimension	Description	Weight
Carton Box I	10000	200×200×100	anti-static plastic bag & carton box 1 reel / bag	0.85
Carton Box II	20000	200×200×200	5 bags / box (50000 pcs) 10 bags / box (100000 pcs)	1.80

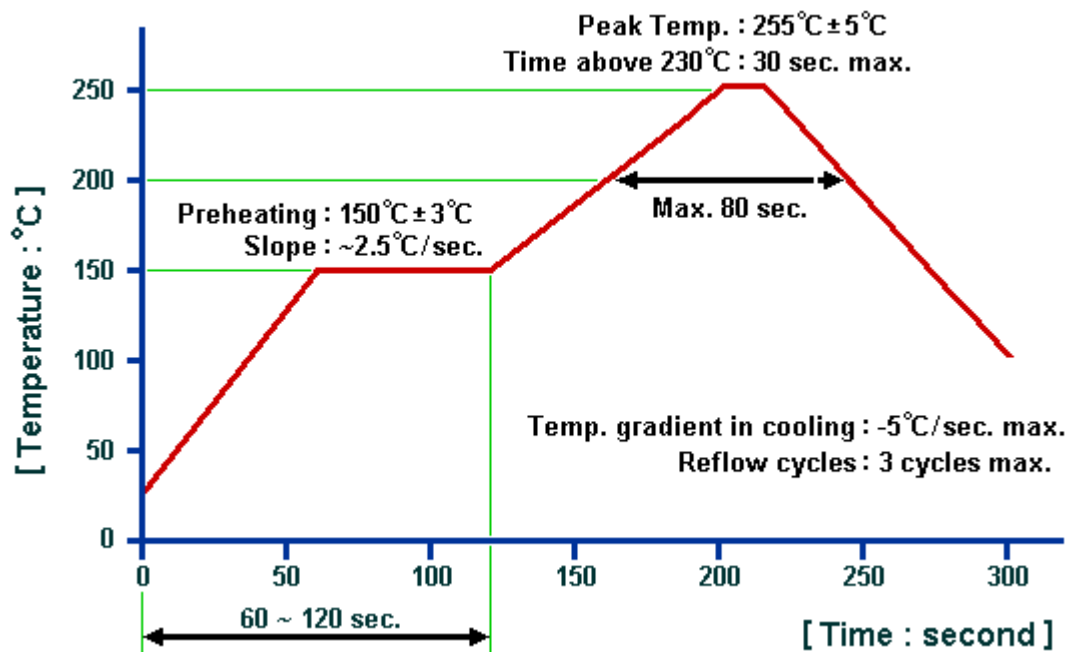
Unit: mm

Unit: kg



**Remarks**

- SAW devices should not be used in any type of fluid such as water, oil, organic solvent, etc.
- Be certain not to apply voltage exceeding the rated voltage of components.
- Do not operate outside the recommended operating temperature range of components.
- Sudden change of temperature shall be avoided, deterioration of the characteristics can occur.
- Be careful of soldering temperature and duration of components when soldering.
- Do not place soldering iron on the body of components.
- Be careful not to subject the terminals or leads of components to excessive force.
- SAW devices are electrostatic sensitive. Please avoid static voltage during operation and storage.
- Ultrasonic cleaning shall be avoided. Ultrasonic vibration may cause destruction of components.

**Recommended Soldering Profile****© HUAYING 2016. All Rights Reserved.**

1. The specifications of this device are subject to change or obsolescence without notice.
2. Typically, equipment utilizing this device requires emissions testing and government approval, which is the responsibility of the equipment manufacturer.
3. Our liability is only assumed for the Surface Acoustic Wave (SAW) component(s) per se, not for applications, processes and circuits implemented within components or assemblies.
4. For questions on technology, prices and delivery, please contact our sales offices or e-mail [sales@dquaying.com](mailto:sales@dquaying.com).